

What is claimed is:

1. A power feeding arrangement for electric loads (R) mounted in tires (20) of vehicles, which arrangement comprises

- 5 – at least one feed coil (L_f) arranged in the vehicle (10),
 – at least one receiver coil ($L_1 - L_4$) arranged in the tire (20), and
 – at least one load (R) electrically coupled to the receiver coil ($L_1 - L_4$) via voltage rectifier(s) (31 -34)

characterized in that in the arrangement

- 10 – each receiver coil ($L_1 - L_4$) is tuned with a serial capacitor ($C_1 - C_4$) and connected to a voltage rectifier (31-34) whereby the DC output currents produced by each rectifier (31-34) flow to the load (R) via at least one receiver coil ($L_1 - L_4$).

15 2. The arrangement of claim 1, **characterized** in that the DC outputs of the voltage rectifiers (31-34) are coupled to the load resistor (R) via receiver coils ($L_1 - L_4$).

3. The arrangement of claim 1, **characterized** in that the load (R) is an electronic circuit.

20 4. The arrangement of claim 1, **characterized** in that the number of receiver coils ($L_1 - L_4$) is four in each tire.

25 5. A tire (20) comprising receiver coils according to any previous claim, **characterized** in that the surfaces of adjacent receiver coils ($L_1 - L_4$) overlap so that the received power is essentially independent of the rotation angle of the tire.

6. A power feeding method for electric loads (R) mounted in tires (20) of vehicles, in which method

- at least one feed coil (L_f) arranged in the vehicle (10) is used for feeding electrical power,

- at least one receiver coil ($L_1 - L_4$) positioned in the tire (20) is used for receiving the fed power, and
- at least one load (R) electrically coupled to the receiver coil ($L_1 - L_4$) via voltage rectifier(s) (31 - 34),

5 **characterized in that**

- each receiver coil ($L_1 - L_4$) is tuned with a serial capacitor ($C_1 - C_4$) and connected to a voltage rectifier (31 - 34) whereby the DC output currents produced by each rectifier (31 - 34) flow to the load (R) via at least one receiver coil ($L_1 - L_4$).

10 7. The method of claim 6, **characterized** in that the DC outputs of the voltage rectifiers (31 - 34) are coupled to the load resistor (R) via receiver coils.

8. The method of claim 6, **characterized** in that the number of receiver coils ($L_1 - L_4$) is four in each tire.

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9. The method of claim 6, **characterized** in that the load (R) is an electronic circuit.

10. A tire (20) for a vehicle (10), **characterized** in that the tire (20) comprises at least one serially tuned receiver coil ($L_1 - L_4$) for receiving electrical power.

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11. A tire according to claim 10, **characterized** in that the number of receiver coils ($L_1 - L_4$) is 4 or more.

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12. A tire according to any previous claim, **characterized** in that the tire (20) comprises two sets of voltage rectifiers (30).

13. A tire (20) comprising receiver coils according to any previous claim, **characterized** in that the surfaces of adjacent receiver coils ($L_1 - L_4$) overlap so that the received power is essentially independent of the rotation angle of the tire.